

Application/Control Number: 10/030,832

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Art Unit: 1795

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Pln

Claims 1 Thru 7 are cancel

8. A monitoring system with a computer (2) for processing image data from a stationary image capturing device (1) that is aimed at a predetermined viewfield, characterized in that based on a reference image of the view field and a current image of the viewfield, the computer (2) establishes a reference edge image and an edge image, that the computer determines the correlation of at least one region of the edge image with the corresponding partial image of the reference edge image, and that when the correlation falls below a threshold, the computer registers the region as changed.

9. The monitoring system according to claim 8, characterized in that the computer determines the correlation of the edge image with the reference edge image, that the computer is connected to a signal indicator (5) so that an alarm is output via the signal indicator (5) when the at least one region is detected as changed for a predetermined time (T1) longer than the edge image is detected as changed.

10. The monitoring system according to claim 9, characterized in that an alarm is output via the signal indicator (5) when the at least one region of the edge image is detected as changed for longer than an additional predetermined time (T2), where the additional predetermined time (T2) is greater than the predetermined time (T1).

11. The monitoring system according to claim 8, characterized in that when the threshold is exceeded, the computer determines the difference of the region of the edge image from the corresponding partial image of the reference edge image, where a possible brightness difference between the reference edge image and the edge image is eliminated from the calculation so that by computing the image noise, a determination can be made as to whether there is a deviation of the region of the edge image from the partial image of the reference edge image that does not result from the image noise and the brightness difference.

12. The monitoring system according to claim 8, characterized in that the image capturing device is a video camera.

13. A method of monitoring a predetermined scene to detect variations in the scene, said method comprising the steps of:

- a) establishing an edge image and a reference edge image based on a reference image and a current image detected in a view field of a stationary image capturing device;
- b) calculating a correlation value for at least one region of the edge image and a corresponding partial image of the reference edge image;
- c) identifying a change of the at least one region when the correlation value falls below a threshold value; and
- d) outputting an alarm signal when the at least one region is identified as changed for a predetermined time interval that is longer than a corresponding time interval that the edge image is detected to be changed.

14. The method as defined in claim 13, further comprising calculating an average quadratic deviation of said at least one region of the edge image and said corresponding partial image of the reference edge image when said correlation value exceeds said threshold value, so that possible brightness differences between said at least one region of the edge image and said corresponding partial image of the reference edge image are eliminated from the calculating;

whereby deviations of said at least one region of the edge image from said corresponding partial image of the reference edge image that do not result from image noise and said brightness differences are distinguished.

15. The method as defined in claim 14, further comprising computing current image noise and storing said current image noise for subsequent image comparisons when none of said deviations that do not result from said image noise and said brightness differences are distinguished.

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16. The method as defined in claim 13, further comprising positioning said stationary image capturing device so that an object to be monitored is in said view field and said variations include motions of said object or changes in said object.

17. The method as defined in claim 16, wherein said object is an exhibited object in a museum.

18. The method as defined in claim 16, wherein said object is an automatic teller machine and said at least one region includes at least one of a keypad field, a cash distribution slot and a card slot of the automated teller machine.

19. A monitoring system for monitoring a predetermined scene to detect variations in the scene, said monitoring system comprising
means for generating a current image in a view field;
means for establishing an edge image and a reference edge image based on a reference image and the current image detected in the view field;

means for calculating a correlation value for at least one region of the edge image and a corresponding partial image of the reference edge image;

means for identifying a change of the at least one region when the correlation value falls below a threshold value; and

means for outputting an alarm signal when the at least one region is identified as changed for a predetermined time interval that is longer than a corresponding time interval that the edge image is detected to be changed;

wherein said means for generating said current image comprises a stationary image capturing device; said means for calculating said correlation value comprises a computer for processing image data and said computer includes means for testing whether or not said correlation value is above or below said threshold value in order to identify said change.

20. The monitoring system as defined in claim 19, further comprising means for calculating an average quadratic deviation of said at least one region of the edge image and said corresponding partial image of the reference edge image when said correlation value exceeds said threshold value, so that possible brightness differences between said at least one region of the edge image and said corresponding partial image of the reference edge image are eliminated from the calculating.